Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

GUIDE TO LEGISLATION AND APPROVALS IN PLACER MINING

Mineral Resources Division
Inspection and Engineering Branch

Canadian Cataloguing in Publication Data

Main entry under title:
Guide to legislation and approvals in placer mining

ISBN 0-7718-8517-2

1. Hydraulic mining - British Columbia. 2. Mining law - British Columbia. I. British Columbia. Mineral Resources Division. Inspection and Engineering Branch.

KEB349.G84 1986 343.711'0775 C86-092083-6

VICTORIA
BRITISH COLUMBIA
CANADA

MARCH 1986
First Printing — 2 000 copies

TABLE OF CONTENTS

Page

1. INTRODUCTION 1

2. MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES (MEMPR) 3
2.1 Section 6.1 of the *Mines Act* and Requirement to Give Notice of Work 3
2.2 Sections 7 to 10 of the *Mines Act* and Requirement to File a Reclamation Program 4

3. MINISTRY OF FORESTS (MOF) 7
Forest Act and Requirement to Obtain Free Use Permit or Licence to Cut 7

4. MINISTRY OF LANDS, PARKS AND HOUSING (MLPH) 9
Land Act and Requirement to Obtain Right-of-way off Placer Lease 9

5. MINISTRY OF ENVIRONMENT (MOE) 11
5.1 *Water Act* and Requirement to Obtain Approval for Use of Water 11
5.2 *Waste Management Act* and Requirement to Obtain a Waste Management Permit 11
5.3 Enforcement by the Province of British Columbia of the *Fisheries Act* of Canada 11

6. THE DEPARTMENT OF FISHERIES AND OCEANS AND THE *FISHERIES ACT* 13

APPENDICES

A. Addresses of Offices — Gold Commissioners, Mineral Titles, Inspectors of Mines 17
B. *Mines Act*, Sections 6 to 11 19
C. Notice of Work and Reclamation Program, Placer Operations (Form 6/7/P) 23
D. Proposed Underground Placer Work — *Mines Act* 31
E. Approval of Work System and Permit 33
F. Receipt and Agreement Form — Mine Reclamation Bonding 37
G. The Reclamation Program and Suggested Work Methods 39
H. Regional Placer Co-ordinating Committees 43
I. Approval of Buildings on a Placer Lease 45
J. Free Use Permit and Licence to Cut, Ministry of Forests 47
K. Guidelines for Settling Ponds 49
L. Colour Coding of Watercourses 51
M. Screening of Water Intakes on Fish Streams 55
N. Plan Submission to Department of Fisheries and Oceans 57

TABLE OF CONTENTS

(by subject matter)

	Page
Addresses — Gold Commissioners' Offices	17
— Mineral Titles Offices	17
— Mine Inspection	17
Approval of Work and Reclamation Permit	33
Buildings on a Placer Lease (Approval, Details)	45
Colour Codes on Watercourses	51
Department of Fisheries and Oceans, Canada and Submission of Plans	13
Free Use Permit, Ministry of Forests	7, 47
Licence to Cut, Ministry of Forests	7, 47
Mines Act, Sections 6 to 11	19
Notice of Work	23
Procedure for Obtaining a Reclamation Permit	5
Receipt and Agreement Form	37
Reclamation Bond	4, 33
Reclamation, Camp Sites	39
Reclamation Permit	33
Reclamation Program	4
Reclamation, Roads	39
Reclamation, Revegetation (Seed and Fertilizer)	40
Reclamation, Trenches, Drill Sites, and Major Excavations	39
Regional Placer Co-ordinating Committees	4, 43
Right-of-Way Approval off Placer Lease	9
Settling Ponds	11, 49
Slash Disposal, Ministry of Forests	7, 47
Timber Sale Licence	7, 47
Underground Placer Work and the *Mines Act*	3
Waste Management Approval, Ministry of Environment	11
Water Approval, Ministry of Environment	11
Water Intakes and Fish Screen Specifications	55
Work Methods (Recommended Good Practices)	39

I.
INTRODUCTION

This guide is written to inform individuals and companies of the requirements of the *Mines Act* and other legislation applicable to placer mining activity in British Columbia. Practices and procedures are described which, if followed, will expedite approval and ensure adequate protection for the province's resources.

The guide does not cover procedures which have been established under the *Mining (Placer) Act* and the Regulations made under this Act for obtaining tenure to the land (a placer lease). Information in this regard can be obtained from the following offices: Gold Commissioners, Mineral Titles, and Inspectors of Mines (*see* Appendix A for addresses). The booklet *A Guide to Placer Staking*, published by the Mineral Resources Division, describes procedure for obtaining tenure and is available at the offices listed. This booklet is a guide only and, in any conflict between it and the Act, the provisions of the Act will apply.

As all approvals for placer mining are based on legislative authority a statement of the appropriate legislation precedes each specific approval procedure. Although many approvals will be initiated by contact with the Inspector of Mines and Resident Engineer (subsequently District Inspector) for the Mine Inspection District involved, the responsibility for obtaining all approvals rests with the placer miner.

II.
MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES (MEMPR)

The mining industry comes under the authority of the *Mines Act* and Mines Regulation, which are administered by the Ministry of Energy, Mines and Petroleum Resources (subsequently MEMPR). Sections 6 to 11 pertain to the submission of notice of work and reclamation program (*see* Appendix B).

2.1 SECTION 6 (1) OF THE *MINES ACT* AND REQUIREMENT TO GIVE NOTICE OF WORK

Section 6 (1) of the *Mines Act* states (*see* Appendix B for full section):

> **"Work system approvals**
>
> 6. (1) The owner, agent or manager shall give notice to the inspector of intention to commence work on, or to stop work in or about a mine, and, except in an emergency, the notice shall be not less than 7 days."

The act of giving notice does not automatically permit the applicant to begin work after expiry of the seven days. Work may only commence after all legislative approvals have been obtained. Reviewing and processing the notice (and related reclamation program) may take up to two months' time depending on the adequacy of the notice, the size and complexity of the operation, and the nature of the surrounding environment. Notice should therefore be given as soon as this can possibly be done.

Form 6/7/P with front side entitled "Notice of Work and Reclamation Program, Placer Operations" has been prepared to assist and expedite the required processing (Appendix C).

Under section 6 (2) of the *Mines Act*, the owner, agent, or manager of the mine must have the written approval of the Chief Inspector of Mines and to obtain this, information as outlined in Appendix D must be submitted to the District Inspector. Other requirements of the *Mines Act* and Mines Regulation which are applicable to underground placer mining are also listed in Appendix D.

Hand Operations

Hand operations, which are defined as those using hand tools (pan, hand sluice, maximum pump size 1½-inch intake) require only the "Notice of Work" to be completed (front page) and the location map. The "Reclamation Program" on the reverse side may be left blank. It should be noted that no direct discharge of water is allowed to a watercourse from hand operations and any settling pond is required to be of sufficient capacity to provide a 4-hour retention.

Mechanical Operations

For mechanical operations, which are defined as those using mechanized equipment, the "Notice of Work" (Appendix C) is sufficiently detailed with respect to the type of information required to include a full description of most sites, however, some larger operations may require additional information to be provided.

Underground Operations

Underground work includes the rehabilitation of workings for the purpose of surveying, mapping, sampling, and drilling and also underground development work including drifting, crosscutting, raising, and drilling.

2.2 SECTIONS 7 TO 11 OF THE *MINES ACT* AND REQUIREMENT TO FILE A RECLAMATION PROGRAM

Section 7 (1) of the *Mines Act* states (*see* Appendix B for complete sections 7 to 11):

> **"Reclamation of surface**
>
> 7. (1) The owner, agent or manager shall file with the minister a program for the protection and reclamation of the surface of the land and watercourses affected by the mine in a form and containing the information the minister may require before commencing preparatory work for production from a mine, and the program must include the particulars and maps that may be prescribed."

Setting Reclamation Bond and Issuing Reclamation Permit

Section 10 of the *Mines Act* gives the Chief Inspector the authority to require that programs be filed with him in lieu of the Minister for approval and issuance of permits. As noted previously the reverse side of the "Notice of Work on a Placer Lease" is the "Reclamation Program" (Form 6/7/P) which is designed to expedite necessary approvals.

Form 6/7/P is submitted to the District Inspector by the placer miner. Following its receipt it is forwarded for a 30-day referral period to other agencies who have jurisdiction over affected resources.

Following interagency review reclamation bonding is set (maximum is $2 500.00 per hectare of disturbed area). Four factors are considered in determining the value of the reclamation bond: the amount of land disturbed, ease of reclamation, environmental sensitivity, and the company's past performance. The advantages to a company in maintaining a progressive reclamation program are obvious. The reclamation permit (*see* Appendix E) is issued by the Chief Inspector containing such special conditions as may be required, and surface work may then begin provided that section 6 of the *Mines Act* and other legislation have been complied with. Payment of reclamation bonding within 30 days is set as a condition of the permit. To effect this the applicant arranges bonding at his bank (*see* Appendix F for "Receipt and Agreement Form").

Form 6/7/P should be submitted annually, although no amendment to the permit is required as long as there is no change to the mining and reclamation program.

Table 1 illustrates the general procedure.

Amending the Reclamation Permit

Should the mining plan be significantly altered (this requires re-submission under section 6) after the Reclamation Permit has been granted so that the protective measures in the reclamation program are no longer adequate, then the Reclamation Permit will require amendment. This may be done through submission by the placer miner of a new Form 6/7/P with the new mining plan and reclamation program documented thereon. In most cases the miner will receive in response a letter which sets out terms of approval under section 6, and which amends the permit and, if necessary, revises the bonding. Work on the new plan is not authorized to commence until it has been approved under section 6 of the *Mines Act*.

Further comments on the reclamation program and work methods are included in Appendix G.

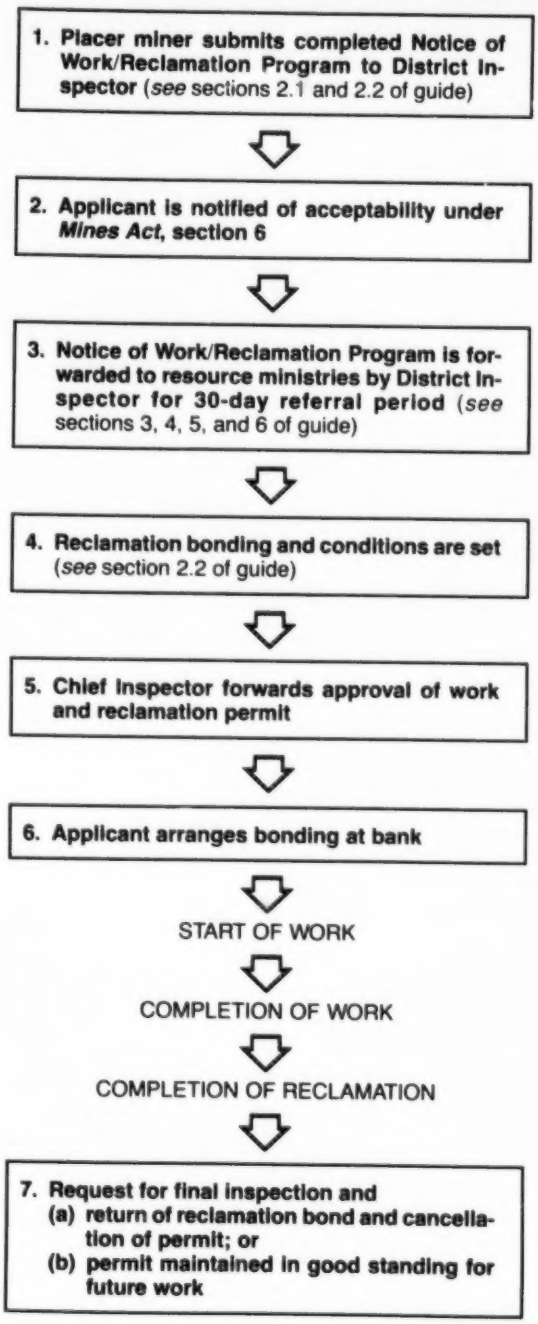
Regional Placer Co-ordinating Committees (RPCC)

As noted previously there is considerable overlap in the various Acts, chiefly relating to environmental control, that govern the range of activities encompassed by placer mining. The respective ministries which administer the legislation have found it advantageous to schedule regular meetings to co-ordinate activities and address specific problems.

In the mid-1970's a RPCC was formed in Prince George and in 1985 this system was expanded to other areas of the province. Appendix H provides further information on the role of the RPCC's. In 1984 as well the approval of the District Inspector was made a requirement for construction of dwellings on placer locations (Appendix I), and these buildings were brought within the coverage of the Reclamation Permit.

TABLE 1

PROCEDURE FOR OBTAINING A RECLAMATION PERMIT


1. Placer miner submits completed Notice of Work/Reclamation Program to District Inspector (see sections 2.1 and 2.2 of guide)
2. Applicant is notified of acceptability under Mines Act, section 6
3. Notice of Work/Reclamation Program is forwarded to resource ministries by District Inspector for 30-day referral period (see sections 3, 4, 5, and 6 of guide)
4. Reclamation bonding and conditions are set (see section 2.2 of guide)
5. Chief Inspector forwards approval of work and reclamation permit
6. Applicant arranges bonding at bank
START OF WORK
COMPLETION OF WORK
COMPLETION OF RECLAMATION
7. Request for final inspection and
(a) return of reclamation bond and cancellation of permit; or
(b) permit maintained in good standing for future work

Note 1: Approval procedure may take several weeks. Notice should be given as soon as possible.

Note 2: Applicant should notify Ministry of Forests.

Note 3: Applicant may be advised of conflict with other legislation.

III.
MINISTRY OF FORESTS (MOF)

FOREST ACT AND REQUIREMENT TO OBTAIN A FREE USE PERMIT OR LICENCE TO CUT

The *Forest Act* and the *Mining (Placer) Act* recognize that some placer operations require the use of rough timbers — primarily for bracing — and that these may be available from clearing operations related to the mining program within the lease [*Forest Act*, section 45 and *Mining (Placer) Act*, section 12]. Provision is therefore made for the obtaining of a Free Use Permit. A first time application (available from all MOF offices) may take up to 30 days. Some conditions governing Free Use Permits are set out in Appendix J. A Free Use Permit does not authorize the sale of cut timber and only that amount that is required for the operation as approved may be cut, and that is the amount outlined in the "Notice of Work and Reclamation Program, Placer Operations."

If clearing is required to be done outside the boundaries of the Placer Lease or if cut timber is not used in the operation, then a Licence to Cut or Free Use Permit is required to be obtained (*Forest Act*, section 47). A Special Use Permit is required to authorize road construction within a provincial forest.

Section 117 of the *Forest Act* covers treatment of slash. Generally one of the following methods of disposal will be required: clearing and pre-logging of merchantable timber; abatement through burning (a permit is required); under given conditions burying (requires close supervision), lopping and scattering, and chipping. Requirements in all of the foregoing are set out in MOF publications.

A joint inspection involving the placer miner and representatives of MEMPR and MOF may be required to assess the proposal and eliminate problems prior to commencement of work.

A Licence to Cut may require six months to finalize, so the application should be submitted in the fall of the previous year to eliminate delays for the following season. A Free Use Permit is issued more quickly.

Wherever possible, timber shall be disposed of through normal established procedures or competition by qualified bidders, in the case of a timber sale (*see* Appendix J for Disposal of Timber on Mineral Claims).

IV.
MINISTRY OF LANDS, PARKS AND HOUSING (MLPH)

LAND ACT AND REQUIREMENT TO OBTAIN RIGHT-OF-WAY OFF PLACER LEASE

In general, the *Land Act* regulates use of Crown land, as relates to access to placer leases, in areas other than those specified for forestry purposes by the *Forest Act*. An approval for a right-of-way for a proposed access road is therefore required to be obtained from the Lands and Housing Regional Office where this traverses lands not designated for forest use. A road which forms part of a mining operation on a Placer Lease does not require a right-of-way from Lands and Housing Regional Operations.

V.
MINISTRY OF ENVIRONMENT (MOE)

5.1 WATER ACT AND REQUIREMENT TO OBTAIN APPROVAL FOR USE OF WATER

The *Water Act* requires that approval be obtained for the use of surface water such as required by a placer operation. The approval may be in the form of a Water Licence or a Water Approval for short-term use. Approvals are not usually required for a hand operation.

The Notice of Work on a Placer Lease has been written in such a manner that it also constitutes an application to the Water Management Branch for approval. Details on the information required on the operation are set out in the form in Appendix C. Such short-term approval is valid only for six months and costs $100.00 per cubic foot per second, or fraction thereof. A certified cheque or money order payable to the Minister of Finance should accompany the submitted Notice of Work.

Permanent structures on a watercourse, for example, dams, bridges, culverts, and creek diversions, require a separate authorization from the Water Management Branch.

5.2 *WASTE MANAGEMENT ACT* AND REQUIREMENT TO OBTAIN A WASTE MANAGEMENT PERMIT

Policy and procedures under the *Waste Management Act* are under active review and changes to present practice are expected. The Regional Waste Manager should be contacted for rules applicable to specific areas.

As a general rule it would appear that total recycle systems, which operate in a satisfactory manner and where chemicals such as cyanide and mercury are not used, will not require a permit. Some guidelines for use in construction and operation of settling ponds are included in Appendix K.

5.3 ENFORCEMENT BY THE PROVINCE OF BRITISH COLUMBIA OF THE *FISHERIES ACT* OF CANADA

The province of British Columbia has a responsibility for enforcement of the *Fisheries Act* of Canada (*see* section 6). The Conservation Officer Service of the Ministry of Environment is the agency most closely involved.

In order to minimize conflict between the industry and fisheries legislation, colour codes for streams were devised which indicate the sensitivity of fish and their habitat to placer mining.

Streams and lakes are coded as follows:

Red (R) — Streams and lakes which contain spawning areas and are highly utilized by fish. These are sensitive areas.

Yellow (Y) — Streams and lakes which contain rearing areas, resident populations of fish, and comprise migration routes or discharge into waters which have these values.

Green (G) — Streams or lakes with no or low fish values.

It is a requirement of Lease Indentures that colour codes be identified on Placer Lease Schedule B.

Guidelines have been developed that determine the type of activity permitted adjacent water-courses within the colour-coded areas, and these are included as Appendix L. Maps showing colour-coded areas are available in the Gold Commissioners offices.

In order to minimize fisheries problems a 10-metre strip of undisturbed vegetation should be left along the stream bank. This growth stabilizes the bank and provides shade, cover, and food for fish.

Backwater channels may provide valuable rearing and migration areas for small fish and may be altered only with approval from Ministry of Environment or Department of Fisheries and Oceans.

VI.
DEPARTMENT OF FISHERIES AND OCEANS AND THE *FISHERIES ACT*

The Department of Fisheries and Oceans enforces the *Fisheries Act* of Canada, and by arrangement with the province of British Columbia so does the provincial Ministry of Environment. In areas of the province in which there are no salmon-bearing streams (the Kootenays and Peace River mainly) the provincial agency may be the only active enforcement agency. A prime rule for avoiding fisheries problems is for the placer miner to contact either agency to determine the nature of the fish resources and the related protection program.

Section 28 of the *Fisheries Act* of Canada requires all water intakes to have proper screening to prevent the passage of fish from any fisheries' waters into the intake. This fish guard or screen is required to be built and maintained by the owner to the approval of the Minister of the Department or such officer as the Minister may appoint. Specifications are included in Appendix M.

Section 31 (1) of the *Fisheries Act* of Canada states that "No person shall carry on any work or undertaking that results in harmful alteration, disruption or destruction of fish habitat." Section 31 (5) of the *Fisheries Act* of Canada defines habitat as "Spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life process." Section 33 gives the Minister of Fisheries power to require submission of plans and evaluations where deleterious substances are likely to be introduced to a watercourse or changes thereto are to be made.

When work is conducted in or adjacent to salmon-bearing streams the Department of Fisheries and Oceans requests notification of same and submission of plan and details of operation where diversions of watercourses or pumping in excess of one cubic foot per second (375 Imperial gallons per minute) are involved. Details and address are included as Appendix N.

In most cases early consultation between the mine and the government officials responsible for fish habitat management will make it possible to devise a plan that meets the needs of all concerned.

APPENDICES

APPENDIX A

GOLD COMMISSIONERS OFFICES — MINISTRY OF FINANCE

Alberni	4515 Elizabeth St., Port Alberni	724-9200
Atlin	Box 100, Atlin	651-7577
Cariboo	102, 350 Barlow Ave., Quesnel	992-4234
Clinton	Box 70, Clinton	459-2268/69
Fort Steele	102 — 11th Ave. S., Cranbrook	426-1211
Golden	Box 39, Golden	344-5221/22
Greenwood	Box 850, Grand Forks	442-5444
Kamloops	Courthouse, Kamloops	372-5233
Liard	412 Douglas St., 617 Government St., Victoria	387-4417
Lillooet	Bag 700, Lillooet	256-7548
Nanaimo	35 Front St., Nanaimo	755-2200
Nelson	310 Ward St., Nelson	354-6121
New Westminster	100, 403 — 6th St., New Westminster	535-0375
Nicola	1840 Nicola Ave., Merritt	378-6141
Omineca	Bag 5000, Smithers	847-7237
Osoyoos	112, 100 Main St., Penticton	492-1211
Revelstoke	Box 380, Revelstoke	837-7636
Similkameen	Box 9, Princeton	295-6957
Skeena	Courthouse, Prince Rupert	627-0414
Slocan	Box 850, Kaslo	353-2219
Trail Creek	Box 910, Rossland	362-7324
Vancouver	800 Hornby St., Vancouver	660-2672
Vernon	3001 — 27th St., Vernon	549-5511
Victoria	412 Douglas Bldg., 617 Government St., Victoria	387-4417

MINERAL TITLES OFFICES — MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

Vancouver	800 Hornby St., Vancouver	660-2672
Victoria	412 Douglas Bldg., 617 Government St., Victoria	387-4417

INSPECTORS OF MINES DISTRICT OFFICES
MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

Prince George (Cariboo-Omineca)	1652 Quinn St.	565-6125
Kamloops	101, 2985 Airport Dr.	828-4566
Nanaimo	2569A Kenworth Rd.	758-8971/72
Vancouver	103, 2747 East Hastings St.	660-9363
Smithers	Bag 5000, 3793 Alfred Ave.	847-7383
Nelson	310 Ward St. (Mail)	354-6125
	403 Vernon St. (Office)	354-6125
Fernie	Box 1290, Cranbrook Rd.	423-6884
Fort St. John (Charlie Lake) (Reclamation Inspector only)	Box 6880, Fort St. John V1J 4J3	787-3450

APPENDIX B

MINES ACT, SECTIONS 6 to 11

Work system approvals

6. (1) The owner, agent or manager shall give notice to the inspector of intention to commence work on, or to stop work in or about a mine, and, except in an emergency, the notice shall be not less than 7 days.

(2) No work, other than surface exploratory work in mines that are not coal mines, shall be commenced without the written approval of the chief inspector.

(3) Before opening or beginning to open or develop a mine, the owner, agent or manager shall file with the chief inspector a report and plan of the system suitable to the chief inspector under which it is proposed to work the mine.

(4) The owner, agent or manager shall not depart from the plan of the system to any substantial degree without the written approval of the chief inspector.

(5) The plan of the system shall

(a) be prepared taking into consideration the safety of the public and persons involved in the work,

(b) be designed so as to make it as practicable as possible in the future to mine zones affected by the plan, and

(c) in relation to a coal mine, provide for maximum possible recovery of the resources having regard to sound engineering practice.

1980-28-6.

Reclamation of surface

7. (1) The owner, agent or manager shall file with the minister a program for the protection and reclamation of the surface of the land and watercourses affected by the mine in a form and containing the information the minister may require before commencing preparatory work for production from a mine, and the program must include the particulars and maps that may be prescribed.

(2) Notice of the filing of the program under subsection (1) must be published, by the person filing it, in the Gazette and in those newspapers specified by the minister.

(3) A person affected by or interested in a proposed program submitted under this section may, within 30 days after the last date on which a notice is published under this section, make written representations to the minister.

1980-28-7.

Reclamation Advisory Committee

8. (1) A Reclamation Advisory Committee is established consisting of the chief inspector as chairman and other persons appointed by the minister.

(2) The minister shall submit the program and representations received by him under section 7 (1) and (3) to the committee which shall study them and make recommendations to the minister.

(3) After considering the recommendations of the committee and any representations made to him under section 7, the minister shall, within 60 days after the last date on which the notice referred to in that section is published,

(a) approve the program,

(b) reject the program, or

(c) after revising or amending the program, approve it in its revised or amended form,

and, where he approves a program, he shall issue a permit authorizing the work subject to compliance with the program.

(4) A permit issued under this section may contain conditions, including conditions pertaining to the future implementation of the program.

1980-28-8.

Security

9. (1) It is a condition of a permit issued under section 8, that the owner, agent or manager of a mine shall deposit as security with the Minister of Finance an amount the minister determines, but not exceeding $2 500/ha of land used or to be used for the mine and the waste disposal of the mine as set out in the approved program.

(2) The security shall be held by the Minister of Finance as security for the proper performance by the owner, agent or manager of the approved program and all the conditions of the permit in a manner satisfactory to the minister, and the security may be used, on requisition of the minister, for the purposes of subsection (6).

(3) During the entire period of production from a mine, the owner, agent or manager shall

(a) continually and progressively reclaim the surface of the land affected by the mining operation in accordance with the approved program, and

(b) if required by the minister, deposit as security in a form satisfactory to the minister, in each year, an amount that, together with the deposit under subsection (1) and calculated over the estimated life of the mine, will provide the money necessary to perform and carry out properly

(i) all the requirements of the approved program at the proper time, and

(ii) all the orders and directions of the chief inspector or an inspector respecting the execution of the approved program.

(4) If a dispute arises respecting an order or direction of the chief inspector or an inspector under subsection (3), the owner, agent or manager may appeal in writing to the minister and the minister shall, after affording the parties the opportunity of a hearing, decide the appeal.

(5) The owner, agent or manager, or an inspector, may apply to the minister for revision of the conditions of the permit issued under section 8, and, following a recommendation of the Reclamation Advisory Committee, the minister may revise the conditions.

(6) Where the owner, agent or manager fails to perform and complete the program for reclamation and the conditions of the permit in a manner satisfactory to the minister, the minister may apply all or a part of the security toward payment of the cost of the work required to be performed and completed.

(7) On the completion, discontinuance or abandonment of a mining operation, and on the minister being satisfied that this section has been complied with and that the approved program has been properly completed, the person who deposited the security is entitled to a refund of it, less any amount paid out under subsection (6).

1980-28-9.

Exercise of minister's powers by chief inspector

10. (1) This section does not apply to a coal mine.

(2) Where a substance in a mine is not a mineral as defined in the *Mineral Act*, the chief inspector has the powers of the minister under sections 8 and 9 and may, without reference to the Reclamation Advisory Committee,

(a) approve programs for reclamation and conservation of land comprising a mine and issue permits required under section 8, subject to conditions he may impose, or

(b) if he is satisfied that the protection and reclamation of the land is adequately secured and controlled under an enactment, by order, exempt that mine from this section.

(3) Sections 8 and 9 do not apply in respect of all placer mining operations, other than hydraulic monitoring, and in respect of all mines in the exploration stage, but where the chief inspector considers that the employment of mechanical equipment is likely to cause significant disturbance to the surface of the land in clearing, stripping, trenching or other operations, he may

(a) require the owner, agent or manager to file with him the program referred to in section 7,

(b) approve programs for reclamation and conservation of the land surface, and

(c) issue permits required under section 8 subject to conditions he may impose.

1980-28-10.

Cancellation of permit

11. Where there is a failure to comply with the terms of a permit issued under section 8 by the minister, or section 10 by the chief inspector, and the failure continues after notice to remedy the failure, the minister or the chief inspector, as the case may be, may cancel the permit and order the owner, agent or manager of the mine to stop the mining operation and on receipt of the order the owner, agent and manager shall stop operations and close down the mine.

1980-28-11.

APPENDIX C

NOTICE OF WORK AND RECLAMATION PROGRAM, PLACER OPERATIONS (Form 6/7/P)

Form 6/7/P

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

MINERAL RESOURCES DIVISION
INSPECTION AND ENGINEERING BRANCH

NOTICE OF WORK
AND
RECLAMATION PROGRAM
PLACER OPERATIONS

Ministry of Energy, Mines and Petroleum Resources (Sections 6 and 7, *Mines Act*)
Ministry of Environment (Section 7–1A, *Water Act* and Section 9, *Waste Management Act*)

This notice is work which is: ☐ PROPOSED ☐ COMPLETED RECLAMATION PERMIT No. .....

1. Placer Lease(s) ..... Term of lease .....
   Leases consolidated .....
2. LOCATION:
   Mining Division ..... NTS map sheet .....
   Stream name ..... Colour Code ..... Draining to .....
   Distance, direction, and means of access to nearest town .....
   .....
3. OWNER:
   Name ..... FMC No. .....
   Address ..... City .....
   Province ..... Postal Code ..... Telephone No. .....
   MANAGER OPERATOR:
   Name ..... FMC No. .....
   Address ..... City .....
   Province ..... Postal Code ..... Telephone No. .....
4. DURATION OF PLACER WORK:
   From ..... To .....
5. HAND OPERATIONS:
   Pump size ..... inches Settling pond: Width ..... m Length ..... m Area ..... m^2

SIGNATURE FOR HAND OPERATOR ONLY:

..... TITLE .....

..... DATE .....

Print Name

APPENDIX C—*Continued*

6. MECHANICAL OPERATIONS: Mechanized equipment (list, with capacity):

(a) ..... (d) .....

(b) ..... (e) .....

(c) ..... Wash plant (type) .....

Pump size: in water course ..... Proposed production/day ..... m^3

in settling pond ..... Actual production/year ..... m^3

7. WATER SUPPLY: (Section 7–1A of the *Water Act*)
Name of the source of water supply (if different from Section 2 on page 1): .....

.....

Quantity of water used from above source: ..... c.f.s. ..... g.p.m.

Location of the point of water intake (Federal *Fisheries Act,* Section 28, requires the intake to be screened).

.....

8. Describe **all** works related to water use, treatment, or discharge (intake, ditches, ponds, pipeline, dams, etc.).

.....

.....

9. WASTE WATER TREATMENT: (*Waste Management Act*)
Describe the waste water treatment facility (size of settling pond, recycling, distance from nearest creek, etc.).

.....

.....

10. Is there any land other than the applicant's placer lease(s) affected by the above works? ..... If yes, give legal description .....

.....

Name of owner .....

11. SURFACE DISTURBANCE ON PLACER LEASES:

(a) Wash plant(s): Width ..... m Length ..... m Area ..... m^2

(b) Settling ponds: No. ..... Width ..... m Length ..... m Area ..... m^2

(c) Mining areas: No. ..... Width ..... m Length ..... m Area ..... m^2

(d) Coarse tailings pile: Width ..... m Length ..... m Area ..... m^2

(e) Road construction: Width ..... m Length ..... m Area ..... m^2

(f) Drilling: No. of sites ..... Dimensions ..... Area ..... m^2

(g) Trenches: No. of sites ..... Width ..... m Length ..... m Area ..... m^2

(h) Camp area: Width ..... m Length ..... m Area ..... m^2

NOTE: The Inspector of Mines must receive a separate application for approval of buildings on leases.

(i) Number of persons ..... Number of work shifts .....

(j) Underground mining: Area of surface facilities ..... m^2

(k) Other (specify) ..... m^2

TOTAL OF SURFACE DISTURBANCE ON PLACER LEASE(S) ..... m^2

(1 ha = 10 000 m^2) ..... hectar

APPENDIX C—*Continued*

12. PRESENT STATE OF LAND ON WHICH WORK IS PROPOSED:
Present land use (agriculture, forestry, ranching, recreation, etc.) .....

.....

Type of vegetation .....

Access roads (present use and condition) .....

Camp sites, old workings (location, condition) .....

Colour code of stream (if applicable) .....

13. RECLAMATION PROGRAM: (Section 7 of the *Mines Act*)
State what will be done to reclaim the following:

Wash plant ..... Settling ponds .....

Mining areas ..... Coarse tailings pile .....

Roads ..... Drill sites .....

Trenches ..... Camp sites .....

Other .....

Seeding: Mixture .....

Rate of application ..... Date .....

Area seeded ..... ha Quantity of seed ..... kg

Fertilizer: Type ..... Rate ..... kg/ha

Area fertilized ..... ha Quantity of fertilizer ..... kg

14. SUMMARY OF AREAS DISTURBED AND RECLAIMED:

Area disturbed current year .....

Previous years ..... Total to date .....

Area reclaimed current year .....

Previous years (final) ..... Total to date .....

15. DATE FOREST SERVICE ADVISED BY OPERATOR: .....

Name and title of forest official:

....
Name Title

Address .....

.....

SIGNATURE OF MANAGER/OPERATOR:

..... TITLE .....

..... DATE .....
Print Name

APPENDIX C—*Continued*

MINING AND RECLAMATION PLAN

PLACER OPERATIONS

Please follow this checklist to ensure all the required information is contained on the mining and reclamation plan and the location map.

MINING AND RECLAMATION PLAN

- ☐ Placer Lease boundary/Placer Lease numbers
- ☐ All water courses
- ☐ Location of water intake
- ☐ Settling ponds
- ☐ Pumps
- ☐ Pipelines
- ☐ Areas proposed for mining
- ☐ Tailings disposal areas
- ☐ Overburden disposal areas
- ☐ Roads
- ☐ Camp site
- ☐ Other disturbed areas
- ☐ Scale
- ☐ Areas proposed to be stripped for mining
- ☐ Process plant

LOCATION MAP

- ☐ Placer Lease boundary/Placer Lease numbers
- ☐ Major roads
- ☐ Nearest community
- ☐ Major water courses
- ☐ Access road

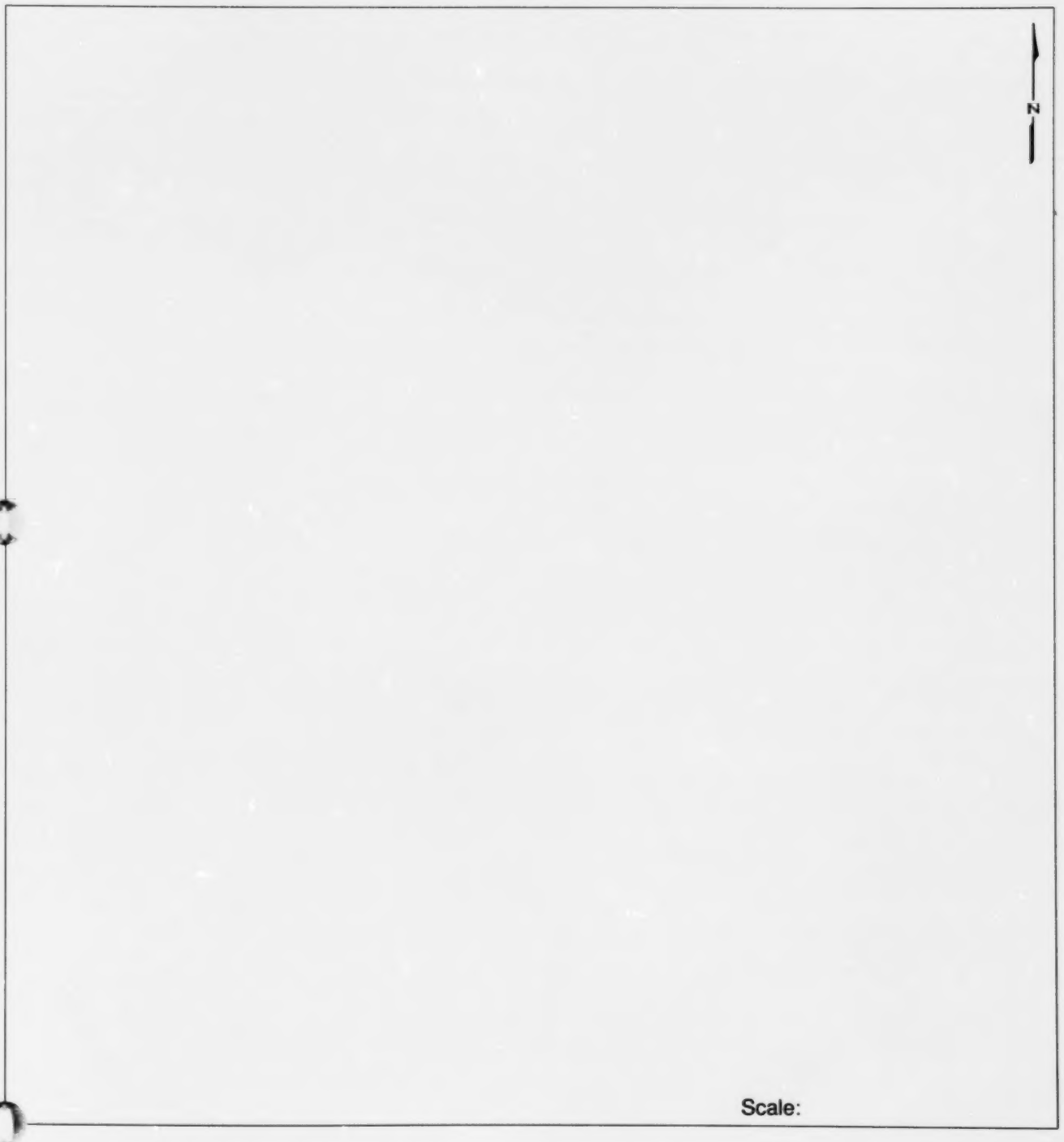
LOCATION MAP

N

APPENDIX C—*Continued*

MINING AND RECLAMATION PLAN

Please refer to the checklist on page 4 for required information.



Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

INFORMATION REGARDING THE COMPLETION
OF THE
NOTICE OF WORK AND RECLAMATION PROGRAM
PLACER OPERATIONS

This form represents a combined application for the Ministry of Energy, Mines and Petroleum Resources and the Ministry of Environment. Please advise the Ministry of Forests prior to submitting this form.

HAND OPERATIONS (HAND-FED SLUICE): Please complete, sign, and date the first page, attach a location map (page 4), and submit to the Inspector of Mines and Resident Engineer not less than seven days before commencement of work and not less than seven days prior to cessation of work.

MECHANICAL OPERATIONS: This form must be completed in full, signed, and submitted to the Inspector of Mines and Resident Engineer. Approvals may take up to **60 days and the operator is encouraged to apply early.** This form must also be submitted not less than seven days prior to cessation of work.

This form should be accompanied by a **certified cheque** or **money order,** payable to the Minister of Finance, to cover the fee required under the *Water Act*. DO NOT MAIL CASH. The fee amounts to $100.00 per c.f.s. **or a fraction thereof** (for example, 2.2 c.f.s. requires $300.00 fee). No Water Act Approval will be issued without payment of the fee.

Any work below the high water level, or diversion of a watercourse, requires an additional approval from the Water Management Branch. Please contact the Ministry of Environment office, at the address listed on the back of this page.

Waste Management Branch approvals are not required for operators who recycle their effluents or discharge to the ground. Operators who discharge to a watercourse, either directly or indirectly, require a Waste Management Branch approval or permit.

UNDERGROUND OPERATIONS: Please contact the Inspector of Mines and Resident Engineer for further instructions.

BUILDINGS: Buildings will only be permitted if they are required for the mining operation and can be constructed only following written approval. At the completion of mining operations, all buildings, including dwellings, are to be completely removed from the site. Contact the Inspector of Mines and Resident Engineer for details.

NO WORK is permitted until the Ministries of Energy, Mines and Petroleum Resources, Environment, and Forests have issued their approvals.

* Please see booklet "Guide to Legislation and Approvals in Placer Mining" for further information.

APPENDIX C—*Continued*

CONVERSION TABLE:

1 inch	= 2.54 centimetres	1 acre	= 0.4 hectare
1 mile	= 1.6 kilometres	1 hectare	= 10 000 square metres
1 metre	= 3.3 feet	1 gallon	= 4.5 litres
1 cubic yard	= 0.76 cubic metre	1 c.f.s.	= 374 g.p.m. (Imperial)

INSPECTOR OF MINES AND RESIDENT ENGINEERS:

Prince George	1652 Quinn Street V2N 1X3	565-6125
Kamloops	101, 2985 Airport Drive V2B 7W8	828-4566
Nanaimo	2569A Kenworth Road V9T 4P7	758-8971, 8972
Vancouver	103, 2747 East Hastings Street V5K 1Z8	660-9363
Smithers	Bag 5000, 3793 Alfred Street V0J 2N0	847-7383
Nelson	310 Ward Street (Mail) V1L 5S4 403 Vernon Street (Office)	354-6125
Fernie	Box 1290 V0B 1M0	423-6884

MINISTRY OF ENVIRONMENT (Waste Management Branch and Water Management Branch offices):

Prince George	Plaza 400, Suite 3, 1011 Fourth Avenue V2L 3H9	565-6400
Williams Lake	Box 9000, 540 Borland Street V2G 1P5	398-4211
Kamloops	1259 Dalhousie Drive V2C 5Z5	374-9717
Penticton	3547 Skaha Lake Road V2A 7K2	493-8261
Nanaimo	2569 Kenworth Road V9T 4P7	758-3951
Surrey	10334 — 152A Street V3R 7P8	584-8822
Smithers	Bag 5000, 3793 Alfred Street V0J 2N0	847-7211
Nelson	310 Ward Street V1L 5S4	354-6121
Cranbrook	1617 Baker Street (Waste Management) V1C 1B4	426-1475
	106 Fifth Avenue South (Water Management) V1C 2G2	426-1452

APPENDIX D

PROPOSED UNDERGROUND PLACER WORK UNDER THE *MINES ACT*

1. Information to be submitted to the Inspector of Mines and Resident Engineer includes:
   (1) Completed "Notice of Work and Reclamation Program, Placer Operations" (Form 6/7/P).
   (2) Detailed plan of present and proposed underground workings.
   (3) Detailed plan of surface installations in relation to mine openings.
   (4) Detailed plan of the system or method of carrying out the proposed work.
2. Some other requirements of the *Mines Act:**
   (1) A manager must be appointed under section 25, *Mines Act.* This person may also act as a shiftboss if he has the necessary certification.
   (2) All work must be under the supervision of a certified shiftboss (section 24). The shiftboss must ensure that all work done in and about the mine is in compliance with the *Mines Act.*
   (3) All miners must have medicals and Certificates of Fitness which must be filed in the mine office.
   (4) The ventilation system must meet the requirements of the *Mines Act* and be maintained by the manager to the satisfaction of the Inspector of Mines and Resident Engineer.
   (5) A permit must be obtained from the Chief Inspector of Mines for each diesel engine used. Forced ventilation equipment and requirements are to be detailed by description and on plans. Gas testing equipment and record book are to be kept up to date by the shiftboss. An Application for a Permit to Operate a Diesel Engine Underground must be sent to the Inspector of Mines and Resident Engineer and section 10 of the Mines Regulation must be adhered to.
   (6) To store and use explosives at a mine, written permission is required from the Inspector of Mines and Resident Engineer. Such permission is granted if the mine can and will comply with explosives and blasting regulations of the *Mines Act* and federal Explosive Regulations.
   (7) All machines must be muffled to the approval of the Inspector of Mines and Resident Engineer and operators must have personal hearing protection (muffs).
   (8) All buildings must meet the requirements of the Building code and Electrical Code V.
   (9) First aid must be maintained in compliance with First Aid Regulations issued under the *Mines Act.*
   (10) Diesel mobile equipment must comply with section 288 of the Mines Regulation regarding roll-over protection and with section 286 regarding emergency steering.
   (11) Equipment used underground must comply with section 126 (2) of Mines Regulation regarding Fire Resistant Fluid.

---

* Note: All requirements of the *Mines Act* must be complied with.

APPENDIX E

APPROVAL OF WORK SYSTEM AND PERMIT

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

APPROVAL OF WORK SYSTEM

AND

PERMIT

APPROVING RECLAMATION PROGRAM — PLACER OPERATIONS

(Issued pursuant to the *Mines Act*)

Permit No. P .....

Issued to .....

Address .....

.....

for placer work on the following leases: .....

.....

Map Reference: .....

Located at: ..... (Creek River)

.....

.....

This approval and permit is issued pursuant to Sections 6 and 10 of the *Mines Act* and is subject to the appended conditions.

Issued this ..... day of ..... in the year .....

.....
Chief Inspector of Mines

APPENDIX E—*Continued*

PREAMBLE

Whereas;

1. Notice of intention to commence work was given on .....

   .....

2. A report and plan of the work system dated .....

   was filed with the Chief Inspector of Mines on .....

3. A program for the protection and reclamation of the surface of the land and watercourses affected by the mine dated

   ..... was filed with the Chief Inspector of Mines on .....

APPROVAL OF THE WORK SYSTEM

The Chief Inspector of Mines hereby approves the report and plan of the work system subject to compliance with the following conditions:

1. The owner, agent or manager shall not depart from the report and plan of the work system to any substantial degree without the written approval of the Chief Inspector of Mines.
2. The owner, agent or manager shall comply with all the provisions of the *Mines Act* and the Mines Regulation.
3. Pursuant to Section 6, *Mines Act*, notice of intention to stop work and a report of work done shall be filed with the Inspector of Mines and Resident Engineer not less than seven days prior to cessation of work.
4. Special Conditions:

APPENDIX E—*Continued*

PERMIT APPROVING RECLAMATION PROGRAM

The Chief Inspector of Mines hereby approves the program for protection and reclamation of the land and watercourses affected by the mine subject to compliance with the following conditions:

1. The owner, agent or manager shall conform to the "Guide to Legislation and Approvals in Placer Mining".
2. The owner, agent or manager shall deposit as security with the Chief Inspector of Mines the amount of

.....

dollars ($) prior to commencement of surface work and within thirty days of issuance of this Permit. The security shall be held by the Chief Inspector of Mines for the proper performance of the approved program and all the conditions of this permit in a manner satisfactory to the Chief Inspector of Mines. The security may be used, on requisition of the Chief Inspector of Mines, for the purposes of condition number 7.

3. During the entire period of production the owner, agent or manager shall
   (a) continually and progressively reclaim the surface of the land affected by the mining operation in accordance with the approved program, and
   (b) if required by the Chief Inspector of Mines, deposit additional security in a form satisfactory to the Chief Inspector, in each year, an amount that, together with the deposit under condition 2 and calculated over the life of the mine, will provide the money necessary to perform and carry out properly
      (i) all the requirements of the approved program at the proper time, and
      (ii) all the orders and directions of the Chief Inspector or an inspector respecting the execution of the approved program.
4. The owner, agent or manager shall comply with the program for the protection and reclamation of the surface of the land and watercourses affected by the mine as follows:
   (a) Topsoil and overburden — Topsoil and overburden (to rooting depth) shall not be removed from the property, but shall be removed from operational areas first and stockpiled separately.
   (b) Location of facilities — Roads and settling ponds shall be located to minimize disturbance of the land surface and watercourses.
   (c) Protection of watercourses — All sluicing operations shall incorporate settling ponds for either recirculation or adequate retention time to comply with requirements of the colour code system.
      NOTE: Application to divert watercourses must be made to the Ministry of Environment, Water Management Branch prior to such diversion being undertaken.
   (d) Erosion control — Measures to control erosion such as ditching and culverting must be used for all disturbed areas.
   (e) Condition of the land — At the termination of operations each year, disturbed areas are to be left in a neat, clean and safe condition.

      At the completion of placer mining operations all areas shall be levelled to conform with the natural terrain, covered with topsoil or overburden and revegetated. All disturbed areas shall be reclaimed to the satisfaction of the Chief Inspector of Mines.
   (f) Buildings — Buildings will only be permitted if they are required for the mining operation and can be constructed only following the written approval of the Inspector of Mines and Resident Engineer. At the completion of the mining operation all buildings are to be completely removed from the site and any foundations must be covered with overburden and revegetated.
   (g) Equipment — At the completion of mining operations, all equipment is to be completely removed from the property.
   (h) Trees and slash — At the completion of mining operations, all dead trees and slash must be burned or buried.
5. Notice of Closure: A report of reclamation shall be filed with the Inspector not less than seven days prior to cessation of work, and this shall accompany the notice required under Section 6.
6. The owner, agent or manager, or an inspector, may apply to the Chief Inspector of Mines for revision of the conditions of this permit and, if he so decides, the Chief Inspector of Mines may revise the conditions.
7. Where the owner, agent or manager fails to perform and complete the program for reclamation and the conditions of this permit in a manner satisfactory to the Chief Inspector of Mines, the Chief Inspector of Mines may apply all or a part of the security toward payment of the cost of the work required to be performed and completed.
8. On the completion, discontinuance or abandonment of this mining operation, and on the Chief Inspector of Mines being satisfied that the approved program has been properly completed, the person who deposited the security is entitled to a refund of it, less any amount paid out under condition 7.
9. Special Conditions: (Use reverse side of sheet if necessary).

NOTE: This permit applies only to the requirements under the *Mines Act*. Other legislation may be applicable to the mining operations, and this permit in no way abrogates the responsibility of the permittee under such other legislation.

APPENDIX F

RECEIPT AND AGREEMENT FORM

Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources
INSPECTION AND ENGINEERING BRANCH

Room 105, 525 Superior Street
Victoria, B.C. V8V 1T7
387-3781

RECEIPT AND AGREEMENT

Bank

Address

Re Application for Reclamation Permit pursuant to section 10 of the *Mines Act*— Substances Other Than Minerals, as defined by section 2 of the *Mineral Act* by

designated as Permit No.

The Bank

(hereinafter called the "Bank") hereby acknowledges that it has received from the undersigned the following, which for convenience are hereinafter called the "securities", namely

and it is agreed between the undersigned and the Bank that—

(1) The securities are hereby lodged for safe-keeping on account of the undersigned but, so long as this receipt and agreement is outstanding, all instructions re sale, transfer, or disposition of these securities must be received from or approved by the Chief Inspector of Mines of the Province of British Columbia.

(2) If the said Chief Inspector of Mines shall advise the Bank that the deposit is required, the Bank shall forward the securities to the Chief Inspector of Mines for the Province of British Columbia.

(3) The coupons representing interest earnings on these securities while held on account of the Province of British Columbia may, as they fall due, be clipped by the Bank and released to the undersigned for disposition as the undersigned may see fit.

(4) The undersigned shall pay to the Bank from time to time its charges for all its services hereunder and also all expenses which the Bank may properly incur by reason of its obligations and duties hereunder.

(5) The Bank may, upon surrender of this receipt and agreement, return the said securities to the undersigned or deal with them in accordance with the undersigned's instructions.

(6) The original only of this receipt and agreement will be issued by the Bank to the Chief Inspector of Mines. One copy only of this receipt and agreement shall be issued, such copy to be retained by the Bank for its files.

(7) By delivery of the original of this receipt to the Ministry of Energy, Mines and Petroleum Resources of the Province of British Columbia, the undersigned shall be deemed to have thereby assigned, and does hereby assign, to the said Chief Inspector of Mines, all the rights and claims of the undersigned to the securities.

(8) The word "undersigned" shall mean the party or parties hereto other than the Bank.

Dated at , B.C., this day of , 19

The Bank

Manager

Accountant

Witness:

Company

Signature

Address

Form 28b

APPENDIX F—*Continued*

INSTRUCTIONS *RE* ACCEPTANCE OF BONDS AS SECURITY UNDER SUBSECTION (2), SECTION 9, OF THE MINES ACT

The following deposits are acceptable:

(1) Government of Canada and Provincial direct or guaranteed securities having a maturity of not longer than three years.

(2) Chartered banks', trust companies', or credit unions' certificates of deposit where supported by an appropriate letter giving direction concerning payment of the funds to the Minister of Energy, Mines and Petroleum Resources (i.e., Term Deposits, Locked Savings Accounts).

The following at present are not acceptable (subject to amendments):

(1) Letters of irrevocable credit
(2) Promissory notes
(3) Broker notes
(4) Canada Savings Bonds
(5) First Canadian Investment Certificates

The Receipt and Agreement forms must be in the name of and executed by the applicant for permit.

Separate Receipt and Agreement forms are required for each permit.

Corporate seals must be impressed, if applicable. Signatures of all partners must be affixed where any partnership is involved.

The Receipt and Agreement forms, together with your security, should be taken to your bank and the forms completed there by the bank manager. The original of the completed form should be forwarded by the bank manager to the Ministry of Energy, Mines and Petroleum Resources, where it will be acceptable as a security deposit on the permit in the amount as indicated thereon.

Where the permit-holder fails to perform and complete the program for reclamation and the terms and conditions of the permit in a manner satisfactory to the Chief Inspector of Mines, the Chief Inspector may apply all or any part of the security in and toward payment of the cost of the work required to be performed and completed.

Upon completion, discontinuance, or abandonment of a mining operation, and upon the Chief Inspector being satisfied that the provisions of the permit have been complied with, and that the program for reclamation of the surface of the land has been properly completed, the permit-holder who deposited the security is entitled to the return of the security, less any amount paid out by the Chief Inspector of Mines.

REPLACEMENT PROCEDURE ON SECURITIES

Matured bonds—When bonds covered by a Receipt and Agreement form reach their maturity date, the permit-holder may wish to replace the matured bonds with a current issue of acceptable bonds. In such cases a new and properly executed Receipt and Agreement form should be completed covering the new issue. Upon acceptance of the new Receipt and Agreement form, the Chief Inspector of Mines will return the "replaced" Receipt and Agreement form direct to the bank concerned.

Change of bank by permit-holder—A permit-holder may decide to transfer his account to another bank and request the "new" bank to assume custody of the securities. Before the actual transfer of securities may take place, it is required that the "new" bank provide new Receipt and Agreement forms covering the securities. Upon acceptance of these documents, the Chief Inspector of Mines will return the "replaced" Receipt and Agreement form to the "original" bank and arrangements for transfer of the securities between the two banks may then be undertaken.

NOTE—Securities are maintained independently on each permit. Please ensure that your permit has not lapsed. If this is the case not only are renewed securities required but an application for renewal of your permit must be submitted. Please contact your Inspector of Mines and Resident Engineer or the Chief Inspector's Office for forms.

APPENDIX G

THE RECLAMATION PROGRAM AND SUGGESTED WORK METHODS

Environmental problems can be avoided in placer mining through minimizing the area proposed to be worked and by avoiding areas such as creeks and stream banks. As noted previously, fisheries problems may be minimized by leaving a 10-metre strip of undisturbed vegetation along the stream bank to stabilize it. The use of testing — drilling and trenching — can minimize cost and area disturbed. The use of power tools in hand trenching makes this an efficient technique in some cases, and eliminates the need for the construction of access roads for heavy equipment.

Backhoe trenches can be used for testing and cause little disturbance. Topsoil and overburden are easily removed and stockpiled adjacent to the trench for use in backfilling. The hoe, a small "cat", or a skidder may be used for both backfilling and site preparation for vegetation.

Backhoe trenches greater than 1.5 metres deep must have their walls sloped back or be provided with adequate structural support to prevent collapse, if it is necessary for a person to enter for sampling or mapping.

Confining work to previously disturbed areas — most possible in the testing stage — eliminates the requirement for obtaining a Reclamation Permit and bonding.

Section 10 of the *Mines Act* gives the Chief Inspector authority to write restrictive conditions into a Reclamation Permit. The placer miner can avoid this necessity by following common-sense work and reclamation methods. Some suggestions are offered:

1. CAMP SITES

Camp sites which are to be abandoned are required to be dismantled at the end of operations. All refuse is to be burned, buried, or removed, and pits backfilled. If required by an Inspector the site shall be ripped to break surface compaction. Camp sites which are to be left for reuse are to be cleaned up and all refuse burned, buried, or removed and pits backfilled.

2. TRENCHES, DRILL SITES, AND MAJOR EXCAVATIONS

All trenches, drill sites, and major excavations are to be backfilled and recontoured, stockpiled topsoil spread over the site, and the entire site seeded and fertilized. Overland drainage is to be relocated in original streamcourses, or conducted around disturbances, or contained in erosion-proof channels.

3. ROADS

Roads may be required by the Ministry of Forests for permanent fire access after the site is abandoned. It is in the operator's interest to contact the Ministry of Forests in this regard. Where directed by an inspector, abandoned roads are to be ripped or recontoured. Recontouring will require the shoulder to be pulled back onto the roadway. Abandoned roads are to have a system of permanent erosion control. Temporary culverts are to be removed and erosion bars installed at adequate intervals.

4. REVEGETATION METHODS

4.1 Areas to be Seeded and Fertilized

All raw earth work areas and cutslope and fillslope faces are to be recontoured where necessary and seeded and fertilized at abandonment.

4.2 Methods of Seed and Fertilizer Application

Broadcasting is the usual method for applying seed and fertilizer. Seed may be broadcast by hand, hand-held cyclone seeders, spreaders mounted on all-terrain vehicles, or spreaders mounted on helicopters or aircraft.

Success is increased, if following broadcasting, the seed is buried by a thin layer of soil. This may be accomplished by running a tracked vehicle over the seed or by harrowing the area.

APPENDIX G—*Continued*

Hydroseeding is a technique whereby a slurry composed of seed, fertilizer, mulch (or soil stabilizer), and water is pumped through a nozzle and sprayed over the ground.

Agricultural seed drills can be used for seed and fertilizer applications. They are limited to well-prepared, level areas.

Recommended seed and fertilizer applications are given in Table 2 for the regions of the province shown on Figure 1. Seed mixtures are given in Table 3. Poor growth occurs if a frost or drought immediately follows germination, so seeding should be done in mid-spring or fall.

If it is not possible to obtain the seed mixes as noted, the local office of the Ministry of Forests may be contacted for advice regarding availability of range mixes.

TABLE 2

RECOMMENDED RECLAMATION TREATMENTS

Note: 1 kilogram = 2.2 pounds; 1 kilogram per hectare = almost 1 pound per acre

	RECLAMATION TREATMENTS				
	SEEDING			FERTILIZER	
REGION	Mixture	Rate kg/ha	Timing	Type	Rate kg/ha
1. COASTAL REGION	I	30	avoid July and August seeding	13-16-10 (19-19-19)	300 (200)
2. SOUTHERN INTERIOR REGION					
— Dry river valleys	III	30	no restrictions; early spring preferred	13-16-10 (19-19-19)	300 (200)
— Mid-elevation uplands	IV	30	early spring or late fall preferred	13-16-10 (19-19-19)	300 (200)
— Wetter higher elevation valleys	I	30	no restrictions	13-16-10 (19-19-19)	300 (200)
— Subalpine	VI	30	no restrictions	13-16-10 (19-19-19)	300 (200)
3. CENTRAL AND NORTHERN INTERIOR					
— Lower elevations	V	30	no restrictions	13-16-10 (19-19-19)	300 (200)
— Subalpine	VI	30	no restrictions	13-16-10 (19-19-19)	300 (200)
— Alpine	VII	seed	in early spring or late fall	13-16-10 (19-19-19)	500 (400)

APPENDIX G—*Continued*

TABLE 3
SUGGESTED SEED MIXTURES FOR USE IN REGIONS SHOWN ON FIGURE 1

Mixture	Biogeoclimatic Zone	Species	Per Cent By Weight
I	Coastal Douglas Fir	Timothy	10
	Coastal Western Hemlock	Perennial Rye	20
	Interior Cedar Hemlock	Orchard Grass	15
	Coastal Cedars Pine Hemlock	Creeping Red Fescue	20
		Canada Bluegrass	5
		White Dutch Clover	30
II	Mountain Hemlock	Orchard Grass	40
		Creeping Red Fescue	40
		Perennial Rye	10
		White Dutch Clover	10
III	Ponderosa Pine Bunch Grass	Crested Wheatgrass	70
		Alfalfa	30
IV	Interior Douglas Fir (dry)	Streambank Wheatgrass	30
		Crested Wheatgrass	40
		Alfalfa	15
		Sainfoin	15
V	Interior Douglas Fir (wet)	Creeping Red Fescue	30
	Sub-boreal Spruce	Timothy	20
		Orchard Grass	20
		Alsike Clover	30
VI	Engelmann Spruce Subalpine Fir	Creeping Red Fescue	40
	Boreal White and Black Spruce	Timothy	40
	Montana Spruce	Alsike Clover (Red Top)	20
VII	Alpine Tundra	Meadow Foxtail	10
	Spruce Willow Birch	Creeping Red Fescue	40
		Timothy	25
		Tracenta Bentgrass	10
		Alsike Clover	15

Figure 1. Regional map to be used in conjunction with Table 2 and Table 3 to determine the prescribed reclamation treatment.

APPENDIX H

REGIONAL PLACER CO-ORDINATING COMMITTEES

Regional Placer Co-ordinating Committees have been established to help co-ordinate the activities of the various government agencies (*see* map Fig. 2 on page 44). They are chaired by a member of the Inspection and Engineering Branch of the Mineral Resources Division of MEMPR and typically include membership from the following offices:

Ministry of Forests
Ministry of Lands, Parks and Housing
Ministry of Environment
Ministry of Finance
Gold Commissioner
Mineral Titles Branch
Ministry of Energy, Mines and Petroleum Resources
Department of Fisheries and Oceans (federal government)

RPCC's may make recommendations to the Gold Commissioner regarding designation and de-designation of areas for placer staking.

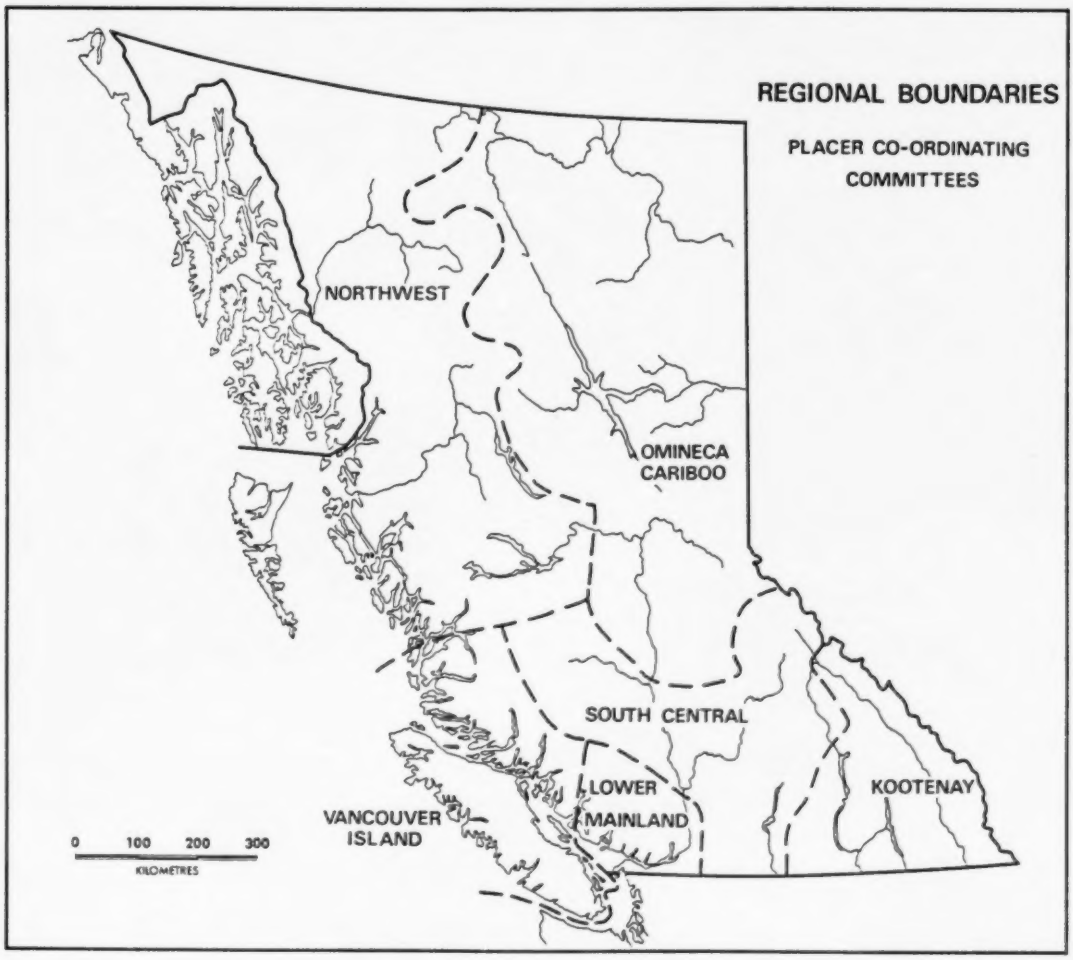


Figure 2. Regional boundaries, Placer Co-ordinating Committees.

APPENDIX I

APPROVAL OF BUILDINGS ON A PLACER LEASE

GENERAL

The Minister of EMPR has authority under section 12 of the *Mining (Placer) Act* to authorize construction of a building on a placer lessee's location. On September 24, 1984, this authority was delegated to the then Inspectors of Mines and Resident Engineeers (District Inspectors) of the Inspection Branch, Mineral Resources Division, MEMPR. To obtain approval for a building the placer miner should therefore describe on the Notice of Work or on an attachment all buildings proposed to be constructed and the use to which they are to be put. A written request for approval of a dwelling should be attached to the Notice of Work. The Chief Inspector has authority under section 6 of the *Mines Act* to approve mine buildings, that is those that are an integral part of the mining system.

NOTES ON BUILDING TYPES AND CONDITIONS

1. CONDITIONS:

- The building must not be located on private land without the written permission of the owner.
- The building must not contravene any Act or Regulation pertaining to the use of the Crown land surface.
- The building must not be used for purposes other than for exploration, for developing, or for producing minerals on the Placer Lease [section 12.1, *Mining (Placer) Act*].
- Buildings, including dwellings, are covered by reclamation bonding and the conditions of the reclamation permit.

2. DETAILS WHICH ARE REQUIRED TO BE SUBMITTED:

- Plan (at least 8½ inches by 11 inches)
- Elevation view.
- Foundation detail.
- Equipment layout.
- Services.
- A description of the purpose and use to which the building will be put.

3. TENT FRAMES AND TRAILERS (Use of these for dwellings is encouraged):

- Tent frames, trailers, motor homes and mobile homes are acceptable on a Placer Lease to a maximum of 30 square metres (323 square feet) of floor space, provided that these units never become permanently fixed to the ground.

4. SKID SHACKS:

- Skid shacks shall be equipped with sufficient skids to allow the entire structure to be moved as a single unit; the building shall not exceed 30 square metres (323 square feet) in floor area and shall not exceed one storey in height, being less than 4.5 metres (15 feet) to the roof peak.
- The building width shall not exceed the maximum permitted to be transported on a provincial highway.

APPENDIX J

FREE USE PERMIT AND LICENCE TO CUT
MINISTRY OF FORESTS

1. FREE USE PERMIT

A Free Use Permit allows for clearing of:

(1) 0.4 hectare (1 acre) = mineralized area

(2) 0.4 hectare (1 acre) = campsite

(3) 0.2 hectare (0.5 acre) = drill site

(4) 0.4 hectare (1 acre) = PORTAL SITE (underground)

(5) 1.6 kilometres for access road and 4.8 kilometres for trails

2. LICENCE TO CUT

A detailed mining plan (1:2500) must be submitted with the Licence to Cut application.

3. TIMBER SALE LICENCE

As determined by Regional Manager of Forests.

4. ADDITIONAL CONDITIONS

(1) Mining operations must comply with the Forest Fire Prevention Regulations. These may be obtained from your nearest Forest Service Office.

(2) Burning permits are required for all burning during fire season. Class 'A' permits for burning machine piles are required all year round.

Campfire permits are no longer required.

APPENDIX K

GUIDELINES FOR SETTLING PONDS

Settling ponds are to be constructed to contain all wash water. It is recommended two (2) to five (5) ponds be used in a series. The first pond should be smaller to catch the sands, and be accessible to permit regular cleanout. Cleanout material should be placed where it will not reach any watercourse (*Fisheries Act* of Canada). The final pond should have at least ten (10) hours (pump rate) holding time to allow the silt to settle prior to recycle to the wash plant. The pond shape should be rectangular with the length to width ratio of five (5) to one (1). The amount of freeboard to be provided between pond surface and top of berm is firstly a matter of engineering design and secondly for approval under the appropriate legislation. The District Inspector (MEMPR) will advise on requirements for specific operations. Many smaller ponds function satisfactorily with a minimum freeboard of 0.5 metre.

The berm which contains the ponds should be wide enough to allow it to be compacted by mechanical equipment and to provide access for cleanout and repairs.

Buildup of solids in the bottom of the pond will reduce settling time and therefore the ability of the pond to trap the fines. The size of pond required for a 10-hour retention should therefore be based on the volume of water contained just prior to cleanout.

A schematic diagram of a settling pond layout is shown on Figure 3.

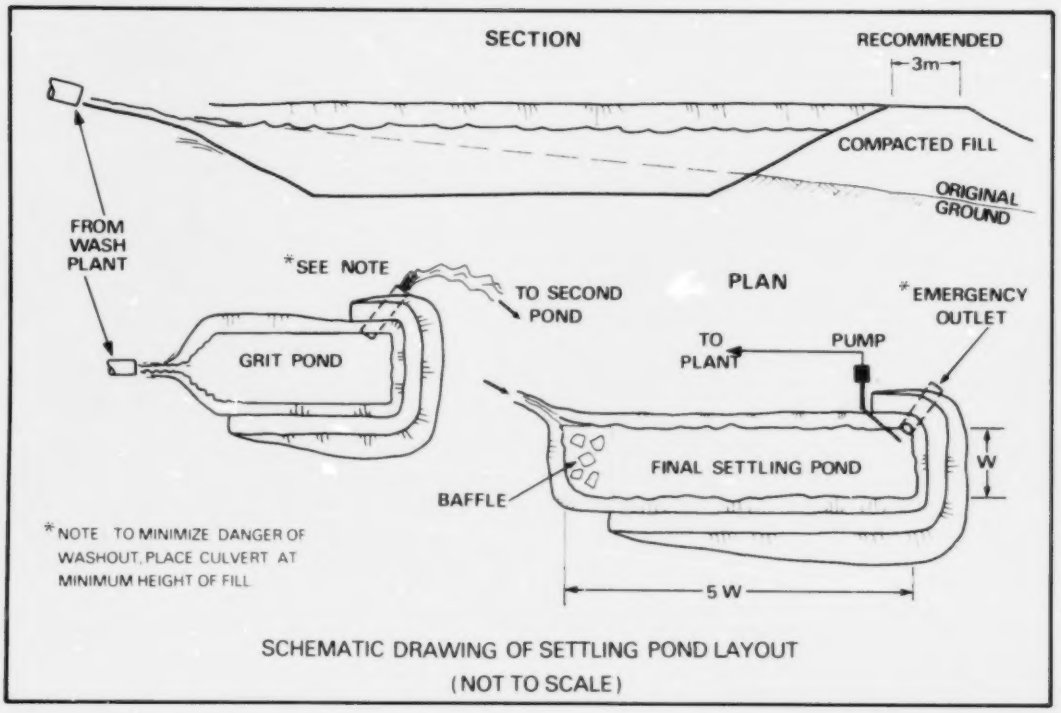


Figure 3. Schematic settling pond layout.

APPENDIX L

COLOUR CODING OF WATERCOURSES

PLACER MINING
SCHEDULE "B" PROVISIONS
FOR
RED CODED STREAMS

(Red Coded Streams are utilized by fish populations for **spawning** purposes. Particularly sensitive and highly utilized rearing and migration areas have also been included in this category.)

The following shall be adhered to unless amended by written permission of the Chief Inspector of Mines:

1. Forest cover and vegetation adjacent to any watercourse shall not be disturbed or removed.
2. Forest cover, topsoil, and debris shall be disposed of in such a manner as to prevent their entry into any watercourse.
3. Gravel or other material below the normal high water level of any watercourse shall not be removed or displaced.
4. Machinery and equipment shall not be operated in any stream or lake.
5. Tailings shall not be placed below the normal high water level of any watercourse.
6. Water intakes and diversions shall be screened in accordance with the screening specifications.
7. All wash water shall be recirculated in a closed system so that there will be no discharge of sediment-contaminated water into any watercourse. Settling ponds shall be located above the normal high water level of any watercourse.
8. All mined or otherwise disturbed ground surfaces, including cut banks, fill slopes, and tailings piles, shall be stabilized to prevent surface run-off from carrying sediment into adjacent watercourses.
9. If this lease location is wholly or partially situated within an Agricultural Land Reserve (as denoted on the Agricultural Land Reserve maps that may be viewed in the Regional District office and the Lands, Parks and Housing office), the following conditions apply:
   i) the placer work cannot take place on, or create dibilitation or disturbance of cultivated agricultural lands;
   ii) access for the purpose of exploration or mining may occur through cultivated lands provided the owner of the land gives express approval and further provided that any land debilitated or disturbed by the access is repaired or rehabilitated to its prior state or condition or better;
   iii) there shall be no disturbance or interference with irrigation systems, fences, gates, cattleguards, and other farm-related developments and structures without the express approval of the owner of the land;
   iv) any area disturbed or debilitated by the placer work shall be reclaimed in accordance with the requirements of the *Mines Act;*
   v) there must be compliance with all other legislation including land use bylaws of a municipality or Regional District and decisions of any responsible authority which may be applicable.

X
X

APPENDIX L—*Continued*

PLACER MINING
SCHEDULE "B" PROVISIONS
FOR
YELLOW CODED STREAMS

(Yellow Coded Streams are utilized by fish populations for **migration** and **rearing** purposes.)

The following shall be adhered to unless amended by written permission of the Chief Inspector of Mines:

1. Forest cover and vegetation adjacent to any watercourse shall not be disturbed or removed.
2. Forest cover, topsoil, and debris shall be disposed of in such a manner as to prevent their entry into any watercourse.
3. Gravel or other material in any stream or lake shall not be removed or displaced.
4. Machinery and equipment shall not be operated in any stream or lake.
5. Tailings shall not be placed into any stream or lake.
6. Water intakes and diversions shall be screened in accordance with the screening specifications.
7. Sediment contaminated water caused by any operation shall be contained and/or treated prior to discharging into any watercourse and the suspended solids content of the effluent shall conform with Level A of the Pollution Control Objectives for the Mining, Mine-milling and Smelting Industries of British Columbia.
8. All mined or otherwise disturbed ground surface, including cut banks, fill slopes, and tailings piles, shall be stabilized to prevent surface run-off from carrying sediment into adjacent watercourses.
9. All mined or otherwise disturbed areas below the normal high water level of any watercourse shall be graded prior to inundation so as not to create new channels or pools at high water levels.
10. If this lease location is wholly or partially situated within an Agricultural Land Reserve (as denoted on the Agricultural Land Reserve maps that may be viewed in the Regional District office and the Lands, Parks and Housing office), the following conditions apply:
    i) the placer work cannot take place on, or create dibilitation or disturbance of cultivated agricultural lands;
    ii) access for the purpose of exploration or mining may occur through cultivated lands provided the owner of the land gives express approval and further provided that any land debilitated or disturbed by the access is repaired or rehabilitated to its prior state or condition or better;
    iii) there shall be no disturbance or interference with irrigation systems, fences, gates, cattleguards, and other farm-related developments and structures without the express approval of the owner of the land;
    iv) any area disturbed or debilitated by the placer work shall be reclaimed in accordance with the requirements of the *Mines Act;*
    v) there must be compliance with all other legislation including land use bylaws of a municipality or Regional District and decisions of any responsible authority which may be applicable.

APPENDIX L—*Continued*

PLACER MINING
SCHEDULE "B" PROVISIONS
FOR
GREEN CODED STREAMS

(Green Coded Streams do not support fish populations and the primary objective of the provisions is to ensure that placer-mining operations are carried out in a manner which prevents the pollution of downstream fish-bearing waters.)

The following shall be adhered to unless amended by written permission of the Chief Inspector of Mines:

1. Forest cover, topsoil, and debris shall be disposed of in such a manner as to prevent their entry into any watercourse.
2. Sediment contaminated water caused by any operation shall be contained and/or treated prior to discharging into any watercourse and the suspended solids content of the effluent shall conform with Level A of the Pollution Control Objectives for the Mining, Mine-milling and Smelting Industries of British Columbia.
3. All mined or otherwise disturbed ground surfaces, including cut banks, fill slopes, and tailings piles, shall be stabilized to prevent surface run-off from carrying sediment into adjacent watercourses.
4. If this lease location is wholly or partially situated within an Agricultural Land Reserve (as denoted on the Agricultural Land Reserve maps that may be viewed in the Regional District office and the Lands, Parks and Housing office), the following conditions apply:
   i) the placer work cannot take place on, or create dibilitation or disturbance of cultivated agricultural lands;
   ii) access for the purpose of exploration or mining may occur through cultivated lands provided the owner of the land gives express approval and further provided that any land debilitated or disturbed by the access is repaired or rehabilitated to its prior state or condition or better;
   iii) there shall be no disturbance or interference with irrigation systems, fences, gates, cattleguards, and other farm-related developments and structures without the express approval of the owner of the land;
   iv) any area disturbed or debilitated by the placer work shall be reclaimed in accordance with the requirements of the *Mines Act;*
   v) there must be compliance with all other legislation including land use bylaws of a municipality or Regional District and decisions of any responsible authority which may be applicable.

X
X

APPENDIX M

SCREENING OF WATER INTAKES ON FISH STREAMS

The specifications for intake structures are:

1. Screen material — shall be either aluminum, stainless steel, brass, or bronze.
2. Screen mesh size — clear openings of the screen shall not exceed 3 millimetres (0.10 inch). The open screen area shall not be less than 50 per cent of total screen area.
3. Screen area — a minimum unobstructed screen area of ten (10) square feet shall be provided for each cubic foot per second (375 Imperial gallons per minute).
4. Screen protection — the intake structure shall, where necessary, be equipped with a trash rack or similar device to prevent damage to the screen from floating debris.
5. Screen accessibility — the screen shall be readily accessible for cleaning and inspection.
6. Design and location — the design and location of the intake structure shall be such that a uniform flow distribution is maintained through the total screen area.

APPENDIX N

PLAN SUBMISSION TO DEPARTMENT OF FISHERIES AND OCEANS UNDER SECTION 33 OF THE *FISHERIES ACT*

Requests for placer operations which involve diversions of watercourse and/or pump capacity greater than 1 cubic foot per second (exceeding 375 Imperial gallons per minute) are to be forwarded to the Manager, Habitat Management Division, Department of Fisheries and Oceans, 1090 West Pender Street, Vancouver, British Columbia V6E 2P1.

The plans should contain the following information:

(1) Intake structure, location, and dimensions.

(2) Maximum capacity of diversions.

(3) Screen dimensions and material.

(4) Mesh size.

(5) Fabrication details.

(6) Minimum water level at the intake site.